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AE8402 AIRCRAFT SYSTEMS AND INSTRUMENTS

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UNIT I AIRCRAFT SYSTEMS 9

Hydraulic systems – Study of typical systems – components – Hydraulic systems controllers – Modes of operation – Pneumatic systems – Working principles – Typical Pneumatic Power system – Brake system – Components, Landing Gear Systems – Classification – Shock absorbers – Retractive mechanism.

UNIT II AIRPLANE CONTROL SYSTEMS 10

Conventional Systems – Power assisted and fully powered flight controls – Power actuated systems – Engine control systems – Push pull rod system – operating principles – Modern control systems – Digital fly by wire systems – Auto pilot system, Active Control Technology.

UNIT III ENGINE SYSTEMS 9

Piston and Jet Engines- Fuel systems – Components - Multi-engine fuel systems, lubricating systems – Starting and Ignition systems.

UNIT IV AIRCONDITIONING AND PRESSURIZING SYSTEM 8

Basic Air Cycle systems – Vapour Cycle Systems, Boot-strap air cycle system – Evaporative vapour cycle systems – Evaporation air cycle systems – Oxygen systems – Fire extinguishing system and smoke detection system, Deicing and anti-icing system.

UNIT V AIRCRAFT INSTRUMENTS 9

Flight Instruments and Navigation Instruments – Accelerometers, Air speed Indicators – Mach Meters – Altimeters - Gyroscopic Instruments– Principles and operation – Study of various types of engine instruments – Tachometers – Temperature and Pressure gauges.

TEXT BOOKS

1. Mekinley, J.L. and R.D. Bent, Aircraft Power Plants, McGraw Hill 1993.
2. Pallet, E.H.J. Aircraft Instruments & Principles, Pitman & Co 1993.

REFERENCES

1. Handbooks of Airframe and Power plant Mechanics, US dept. of Transportation, Federal, Aviation Administration, the English Book Store, New Delhi, 1995.
2. McKinley, J.L. and Bent R.D. Aircraft Maintenance & Repair, McGraw Hill, 1993.
3. Teager, S, "Aircraft Gas Turbine technology, McGraw Hill 1997.